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ABSTRACT

A 10-year study examined the relationship between type of school and student self-concept and academic achievement. The study was conducted at two coeducational high schools in Australia, one of which had been an all-girls' school and the other an all-boys' school. Subjects were approximately 1,300 students from grades 7 to 11 in the two schools. Findings indicated that after the first 5 years of coeducation, both girls' and boys' self-concept, measured multi-dimensionally by the Marsh Self-Description Questionnaire II, increased substantially to a level above that which was measured when the students were in single-sex classrooms, after an initial decline associated with the transition to coeducation in the first year of the changeover. Student achievement in grade 10 English and Mathematics remained stable over the five years of the evaluation. Follow-up research after 10 years of coeducation at the two schools indicated that student self-concept remained at the high levels reported after 5 years. However, enrollments at the former girls' high school declined after an initial increase in enrollment immediately after initiating coeducation. A similar decline at the former boys' school was reversed when it changed from a comprehensive to an academically selective coeducational school. Patterns of enrollments in senior high school English and Mathematics varied yearly in the former girls' school, with a trend toward less demanding choices. School achievement in the public examinations at the end of grade 12 tended to decline at the former girls' school. (KDFB)

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THE IMPACT OF COEDUCATIONAL SCHOOLING ON STUDENT SELF-CONCEPT AND ACHIEVEMENT*

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ABSTRACT

The issue of the relative advantages and disadvantages of coeducational and single-sex schools for girls and boys continues to arouse considerable controversy in Australia and other countries. While the empirical evidence on the relationship between type of school and academic achievement is mixed, there is evidence that attendance at coeducational schools is associated with higher levels of student self-concept than is attendance at single-sex schools. This paper reports a ten-year study of two coeducational high schools, one of which had been an all-girls' school and the other an all-boys' school. The major findings of the evaluation after the first five years of coeducation were that both girls' and boys' self-concept, measured multidimensionally by the Marsh Self-Description Questionnaire - II (SDQ-II), increased substantially after an initial decline that was explained by the uncertainties associated with the transition to coeducation in the first year of the changeover. Secondly, student achievement in grade 10 English and Mathematics remained stable over the five years of the evaluation. Follow-up research conducted after 10 years of coeducation at the two schools revealed that student self-concept remained at the high levels reported after the first five years of coeducation. Nevertheless, enrolments at the former girls' high school declined after an initial increase in enrolment immediately after coeducation began, while a similar decline at the former boys' high school was only reversed by its change from a comprehensive to an academically selective coeducational school. Possible reasons for these enrolment and other trends at the two schools are outlined in the paper.

REVIEW OF LITERATURE

The research literature on the effects of coeducation on student achievement and self-concept is fraught with inconsistencies and methodological problems. Single-sex/coeducational comparisons are hampered by the problem of selecting equivalent schools of each type of gender-based enrolment. Because single-sex high schools are more likely to be academically selective public or private schools, their students are generally more intelligent and/or come from higher socioeconomic backgrounds. than students who attend coeducational schools which are usually comprehensive high schools. Therefore, comparisons between the two types of schools are made difficult by methodological problems. Nevertheless, there has been a number of studies which have compared schools from a single system (e.g., single-sex and coeducational comprehensive high schools in a single state/province). Other research has compared single-sex and coeducational classes within the same school.

A review of United Kingdom and Australian research concluded that "the empirical evidence in favour of single-sex schooling is of questionable value" (Willis and Kenway, 1986). These reviewers maitained that a causal relationship between single-sex schooling and superior achievement had not been established, implying that separate schooling is dangerous in its potential for greater social divisiveness. Students who attend single-sex schools may develop stereotypical attitudes towards the opposite sex (Phillips, 1979). On the other hand, there is considerable evidence that boys tend to take more of the teacher's attention, both positive and negative, in most coeducational classes (Sampson, 1989; Spender, 1982). Gill(1991) reported, however, that higher levels of teacher-male student interaction was more common when the teacher was inexperienced.

On the issue of the social advantages of coeducational or single-sex schools, Harris (1986) found that, in a survey of over 500 first-year Australian university students, most students preferred coeducational high schools for preparing them for university and for the wider society. This result was especially true for the students who had gone to single-sex schools, many of whom had difficulties adjusting to a coeducational educational environment at university. Dale's (1974, p.273) research in English grammar schools concluded that:

> **It has been demonstrated that the average coeducational grammar school is a happier community for both staff and pupils than the average single-sex school; it has equally been demonstrated that this happiness is not at the expense of academic progress.**

While there is some confusion about the definition of self-concept (Kahne, 1996), it is defined here as student perceptions and evaluations of their personal qualities and abilities. Dale's results imply that student self-concept should be higher in coeducational than single-sex schools. This ten-year research project was aimed at addressing this issue.

METHODS

Subjects

The subjects of this ten-year evaluation were students from grades 7 to 11 in two Sydney public high schools. As outlined in Figure 4, total enrolment at the former girls' high school at the beginning of the project in 1983 was approximately 700, while the former boys' high school had approximately 600 students from Years 7 to 12. At the end of the project ten years later the enrolments at both schools had dropped to about 500 for the former girls' high school and to 550 for the former boys' high school. No testing was carried out with the final Year 12 students because they were undertaking their end-of-school public examinations at the time of testing. Both schools were located in a predominantly middle class area of Sydney and were physically separated by parkland.

Instruments

The self-concept scale employed in this research was the Marsh Self Description Questionnaire - II (Marsh, 1990). This scale is probably the most widely used self-rating scale for adolescent self-concept in the world at present. It was developed in Australia by Herb Marsh and has since been used in many countries, including the UK, Canada and the USA. It is published by the Psychological Corporation, with norms based on a large sample of more than 5,000 subjects. It has 102 items assessing 11 self-concept dimensions: Physical Appearance (Appr); Physical Abilities (Phys); Mathematics (Math); General Self (Genl); Honesty-Trustworthiness (Hons); Verbal (Verb); Emotional Stability (Emot); Parent Relations (Prnt); General School (Schl); Same-Sex Relations (Ssex); Opposite-Sex Relations (Osex), as well as a Total Self-Concept (Total) score. Internal consistency coefficients range from .83 to .91 on the eleven scales, which indicates that it is highly reliable. Confirmatory factor analyses have repeatedly shown that there are 11 clear sets of factor loadings which correspond to the hypothesised scales. This factor structure was replicated in this study. Marsh(1990) presents data on the construct validity of the scale.

Procedure

The SDQ-II was administered to all students from grade 7 to 11 in both schools at the end of each school year from 1982 to 1985. 1982 was the year before coeducation was implemented in grades 7, 9 and 11 in 1983. In 1984 and 1985 all students in both schools were in coeducational classrooms. It was administered again in 1993, ten years after the coeducation of the two schools took place, to all grade 7 to 11 students in both schools.

School achievement in English and Mathematics was assessed by scores on the externally moderated achievement tests in these two school subjects at the end of grade 10 from 1982 to 1986. These were the only two school subjects which were directly comparable at the two schools because of the moderation process to ensure comparability of achievement standards at the two schools. This enabled the researchers to measure the impact of the coeducation process before, during and for three years after coeducation was complete.

RESULTS

In brief, the major results were:

1) Multidimensional student self-concept initially decreased in coeducational classrooms and then increased to a level substantially above that which was measured when the students were in single-sex classrooms **(See Figure 1).**

2) Increased student self-concept in coeducational classrooms applied to both girls' and boys' self-concepts **(See Figures 2 and 3).**

3) Total enrolments at the former girls' high school initially increased and then decreased, while enrolments at the former boys' high school initially decreased and then subsequently increased **(See Figures 4, 5 and 6).**

4) Patterns of enrolments in senior high school English and Mathematics varied from year to year in the former girls' high school, with a trend towards less demanding choices **(See Figures 7 and 8).**

5) School achievement in the public examinations at the end of grade 12 tended to decline at the former girls' high school **(See Figure 9).**

CONCLUSIONS

The general conclusion is reached that coeducation occurred at the two high schools relatively smoothly and with no detrimental effects on student achievement in grade 10 English and Mathematics. While there was a temporary decline in multidimensional student self-concept in grades 7, 9 and 11, which were the first grades to become coeducational in 1983, this trend was reversed in subsequent years and the increase in student self-concept was maintained ten years after the coeducation process had occurred. This social benefit of coeducation persisted despite many other changes that also occurred in the two high schools over the ten year period of the study. Nevertheless, there was a drift in student enrolments at both schools over the course of the research. While the former girls' high school intially increased its enrolment, it subsequently declined as it competed for students with a nearby all girls' high school and with the former boys' high school which was transformed into an academically selective coeducational high school in 1990. In the face of competition from two schools who were attracting students on the basis of academic excellence, the former all girls' school began to market itself as a comprehensive high school with excellence in environmental education and dance/drama. These subjects were not as attractive to parents and their children as the more traditional academic emphasis. It seems that we are living in an era when the bottom line for most parents and their children is how well a school is perceived as a centre of **academic excellence**, irrespective of its ability to cater for the **self-concept** development of its students.

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FIGURE 1

Mean dimensions of self-concept in 1982, 1985, 1993

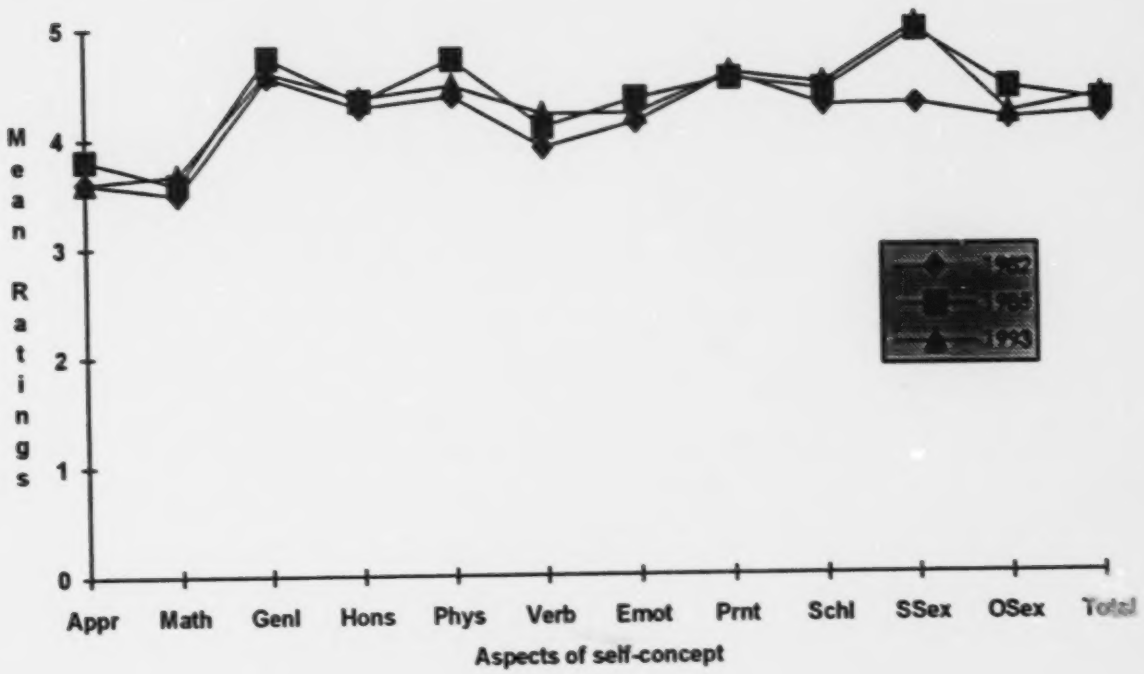

FIGURE 2

Male dimensions of self-concept in 1982, 1985, 1993

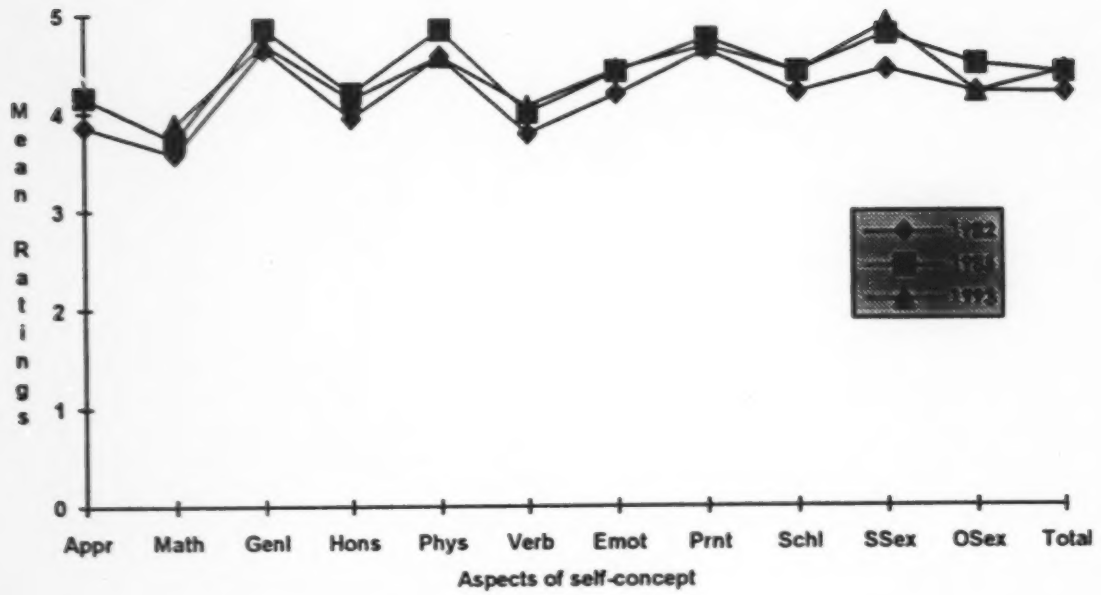

FIGURE 3

Female dimensions of self-concept in 1982, 1985, 1993

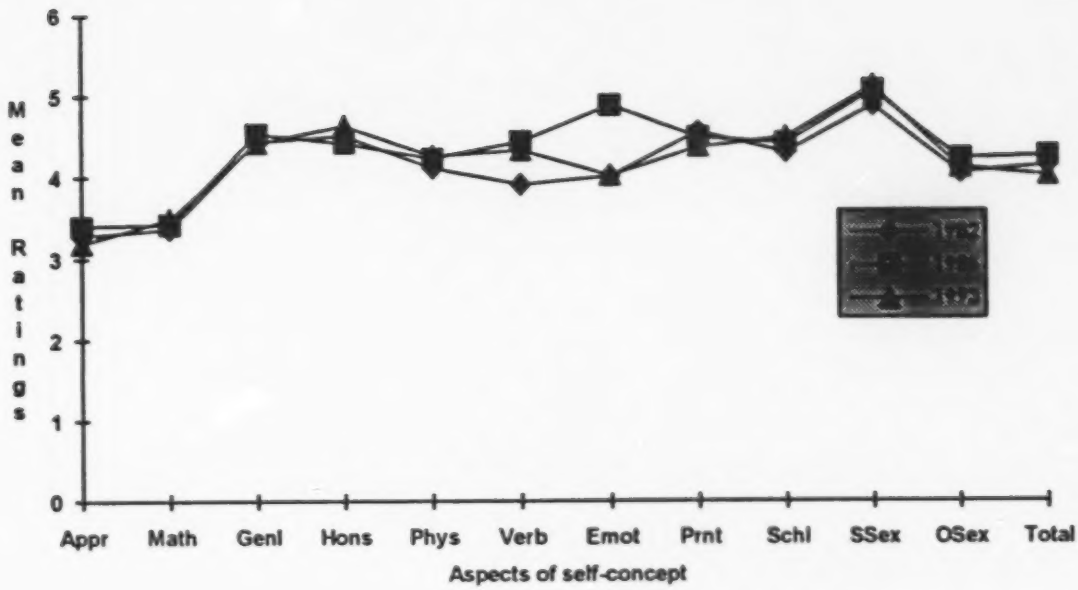

FIGURE 4

Total enrolments at former girls' and boys' high schools

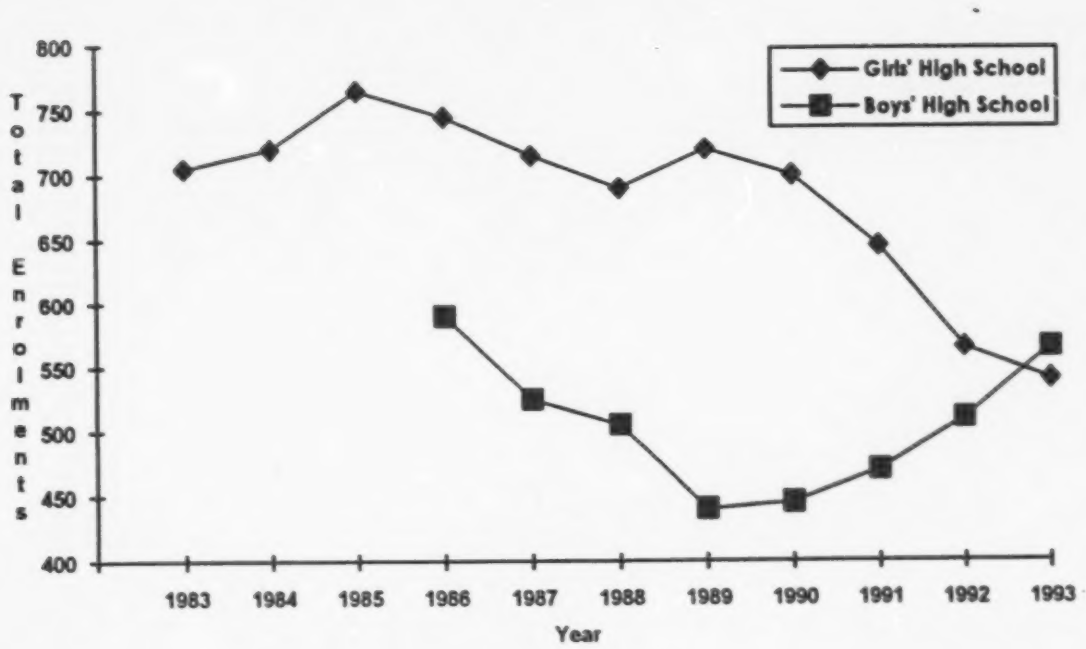

FIGURE 5

Mid-year enrolments at former girls' high school by gender

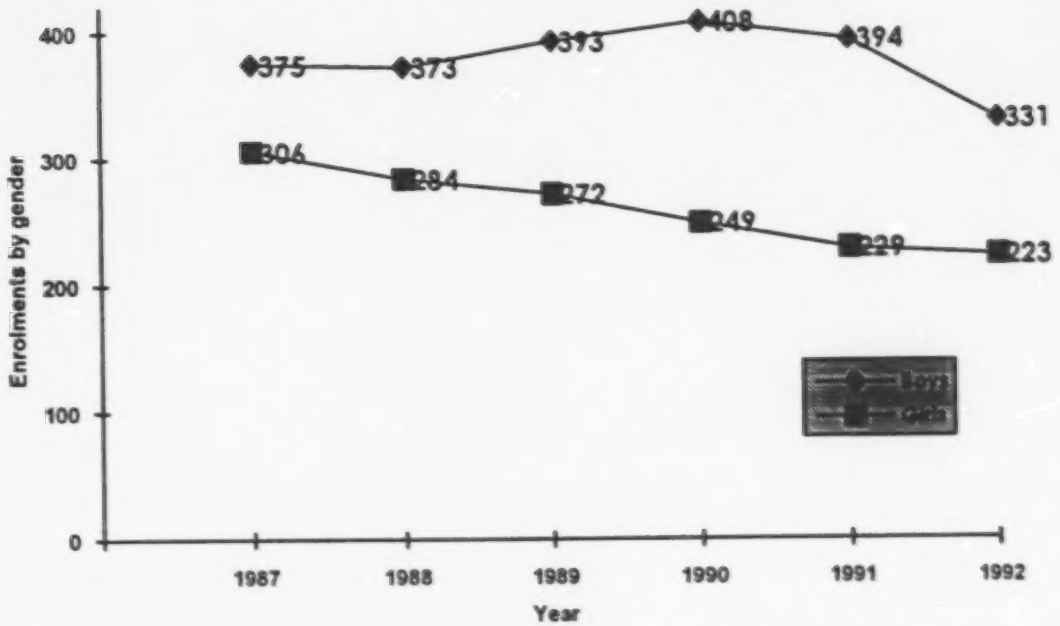

FIGURE 6

Enrolments at former boys' high school, 1986-1993

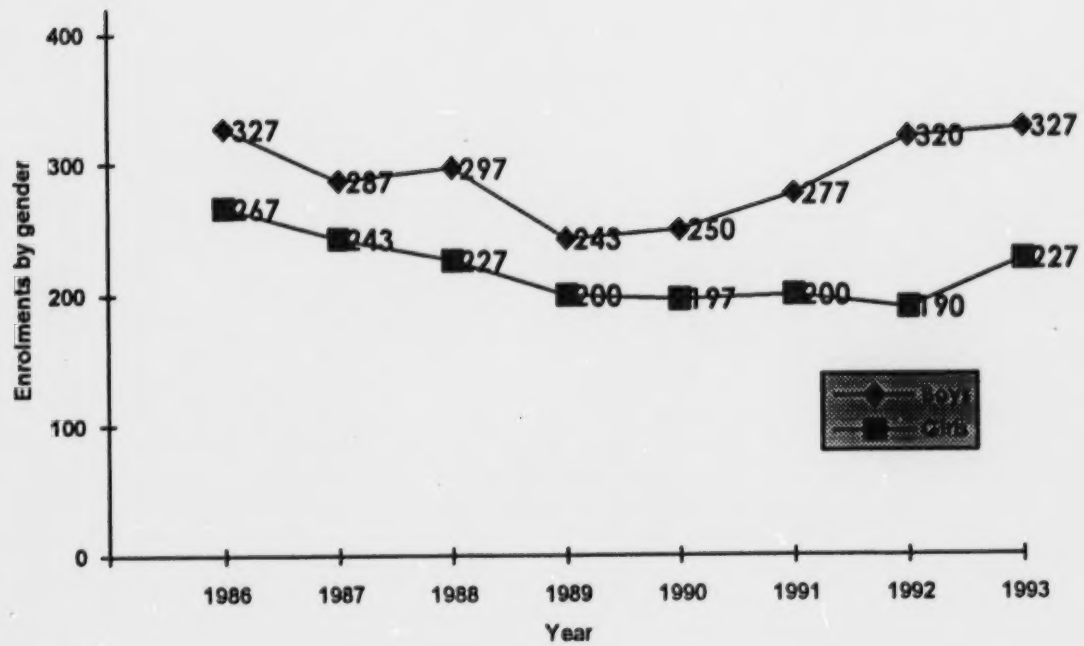

FIGURE 7

HSC English enrolments at former girls' high school

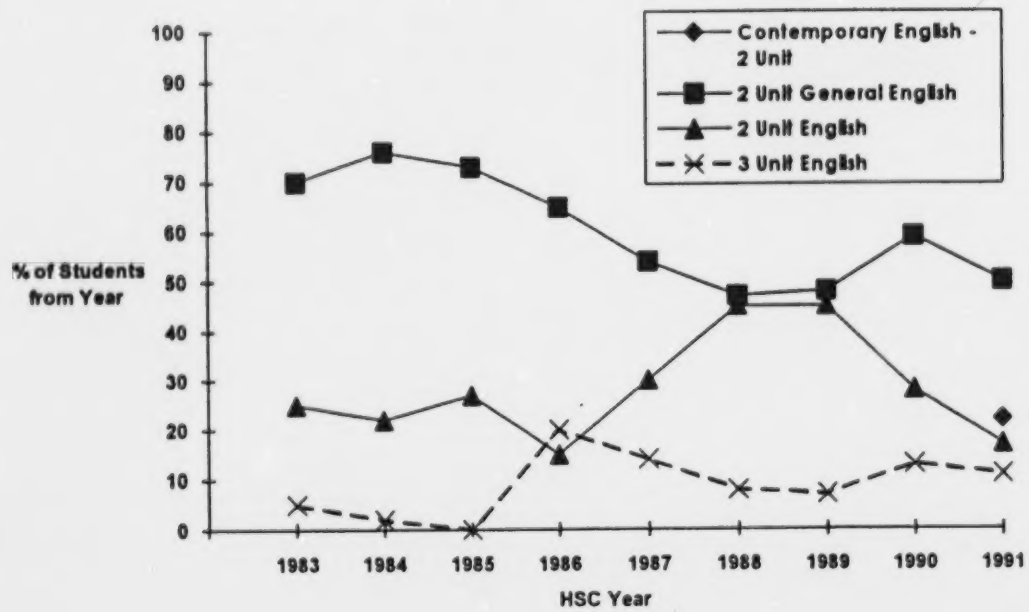

FIGURE 8

HSC Mathematics enrolments at former girls' high school

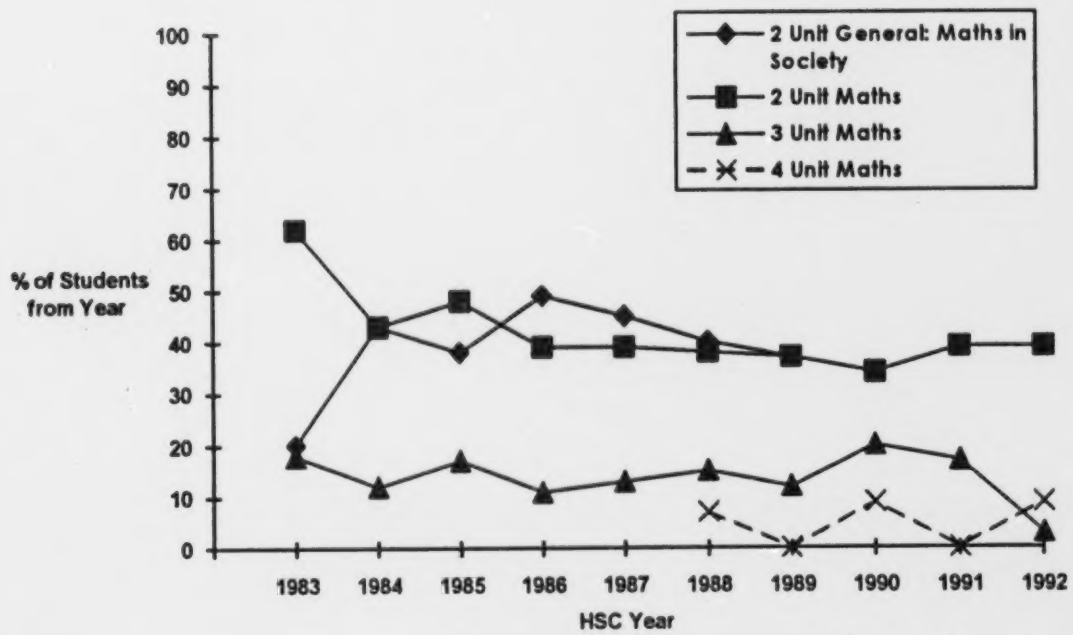

FIGURE 9

Tertiary Entrance Rank (TER) from 1990-1992 at former girls' high school